F·A·A·M facility for airborne atmospheric measurements

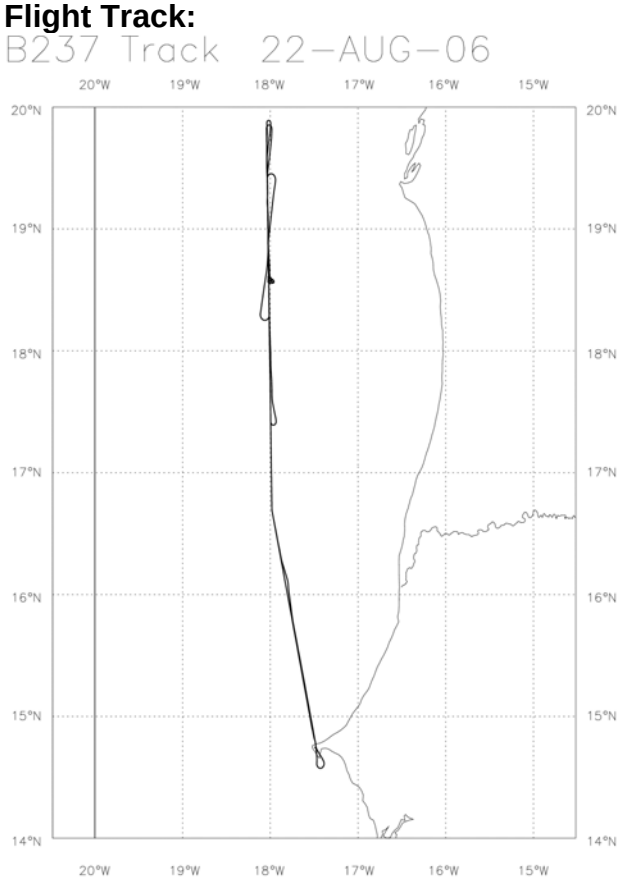
FLIGHT FOLDER

Flight No.:	B237
Date:	22 August 2006
Take Off	13:58:55
Landing:	18:24:01
Flight Time	4h25m06

Campaign: DODO
Trials Instructions: Co-ord MCS
Operating Area: Dakar

POB	Position	Name	Institute
1	Captain	Alan Foster	Directflight
2	Co-pilot	Steve Ball	FAAM
3	CCM	Gaynor Ottaway	Directflight
4	Mission Scientist 1	Jim Haywood	Met Office
5	Flight Manager	Alan Woolley	FAAM
6	Core Chemistry / PSAP / NEPH / TDLAS	Jim McQuaid	Leeds University
7	Cloud Physics	Martyn Pickering	Met Office
8	AMS	Paul Williams	Manchester University
9	Filters	Paola Formenti	University of Paris 12 (LISA)
10	Avaps/CCM2	Paul James	FAAM
11	SWS/Shims	Claire McConnell	Reading University
12	Mission Scientist 2	Hugh Coe	Manchester University
13			
14			
15			
16			
17			
18			

Flight Track:

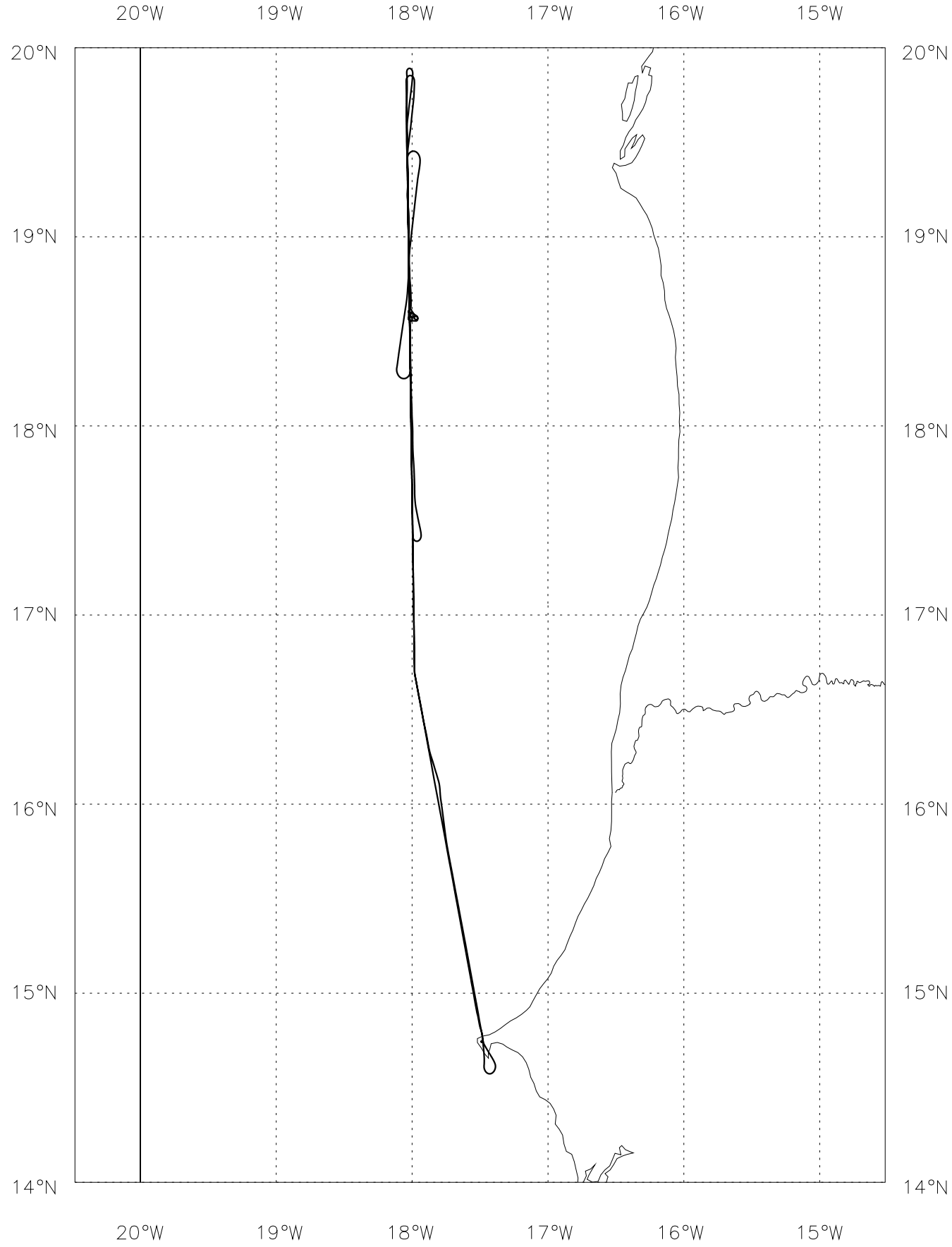


FLIGHT SUMMARY

Flight No b237
Date: 22/08/06
Project: DODO
Location: Dakar, Atlantic Ocean

Start Time	End Time	Event	Height (s)	Hdg	Comments
134449		engine start	0.04 kft	330	
134759		power change	0.04 kft	330	
135027		taxy	0.04 kft	330	
135855		T/O	0.03 kft	173	from Dakar
140345	141713	Run 1	5.0 kft	323	
140743		bbr	5.0 kft	348	Shutter Up (U)
141714	142437	Profile 1	5.0 - 0.03 kft	347	qnh 1017
142437	144527	Profile 2	0.03 - 20.0 kft	348	
142712		bbr	2.0 kft	342	Shutter Down (D)
143134		jw/nevz zero	6.2 kft	347	
144612	145048	Profile 3	20.0 - 16.0 kft	359	
145048	151029	Run 2	16.0 kft	004	
145141		bbr	16.0 kft	005	U
151030	152001	Profile 4	16.0 - 8.0 kft	003	
151124		bbr	15.1 kft	003	D
151554		Profile 4	10.0 kft	001	interrupt
151739		Profile 4	10.0 kft	180	resume
152001	154644	Run 3	8.0 kft	186	
152010		bbr	8.0 kft	186	U
153532		Video	8.0 kft	175	tapes change
154645	155929	Profile 5	8.0 - 0.09 kft	175	
154654		bbr	8.0 kft	175	D
155220		Profile 5	3.0 kft	180	interrupt
155418		Profile 5	3.0 kft	345	resume
155800		PSAP	0.09 kft	356	Filter Change
155929	161217	Run 4	0.09 kft	356	
155944		bbr	0.08 kft	355	U
161401	161516	Orbit 1	0.45 - 0.41 kft	070	right hand down
161612	161720	Orbit 2	0.43 kft	242	rhd
161817	161927	Orbit 3	0.44 - 0.43 kft	330	rhd
162017	162124	Orbit 4	0.47 - 0.44 kft	024	rhd
162250	164348	Run 5	0.09 - 0.07 kft	357	
164533	170308	Profile 6	0.07 - 16.0 kft	187	
164707		bbr	0.83 kft	189	D
170308	170752	Run 6	16.0 kft	174	
170855		Video	16.0 kft	273	tapes changed
171003		bbr	16.0 kft	017	U
171008	171907	Run 7	16.0 kft	016	
171908	172346	Profile 7	16.0 - 20.0 kft	003	
171931		bbr	16.3 kft	003	D
172407		bbr	20.0 kft	017	U
172600	180026	Run 8	20.0 kft	186	
172610		Sonde 1	20.0 kft	188	
173247		speed	20.0 kft	176	above science spd
173601		Sonde 2	20.0 kft	178	
180026	181620	Profile 8	20.0 - 4.0 kft	164	
180116		bbr	19.2 kft	163	D
180640		bbr	13.5 kft	159	U
181718		bbr	4.0 kft	167	D
182401		Land	0.07 kft	177	at Dakar

B237 Track 22-AUG-06



FAAM Sortie Brief

DODO2: in-situ sampling and radiometric measurements of mineral dust

Flight No: B237 Date: 22 August 2006

Trial objectives:
To carry out in-situ sampling of mineral dust and measure the radiative effects.

Location:
Over ocean areas off the coast of Senegal/Mauritania.
Point alpha = 20N, 17.5W.

Weather:
High loadings of dust. Cloudless skies preferred.

Special requirements:
Low-level (50ft) flying over ocean.
60 degree banked orbits at 600ft.
2 dropsondes required.

Flight pattern:

1. Take off from Dakar at 14Z.
2. Ascend to 5000ft and once instrumentation is ready, perform a profile descent to 50ft over ocean, followed by a profile ascent to 20,000ft (or above the dust layer) at 1000ft/min in a direction towards point alpha [30mins, T=30mins].
3. Profile descent to a level determined by the mission scientist followed by a set of three in-situ sampling SLRs at different altitudes each run of 10minute duration [50mins, T=80mins].
4. Reciprocal turn, followed by a SLR at MPA (100ft) directly beneath the in-situ sampling runs for approximately 60minutes [60mins, T=140mins].
5. Reciprocal turn, then a profile ascent to a level determined by the mission scientist followed by a set of three in-situ sampling SLRs at different altitudes each run of 10minute duration. A 60dgree banked orbit may/may not be required during this run [50mins, T=190mins].
6. Reciprocal turn, then a SLR at 20,000ft (or above the dust layer) directly above the in-situ sampling runs for approximately 40mins. A sonde should be dropped at the beginning and at the end of the run. [40mins, T=230mins].
7. Profile descent to 50ft towards Dakar [20mins, T=250mins].
8. Recover to Dakar [10mins, T=260mins].

Sortie Debrief

Flight Number: B237 Date: 22nd August 2006

Sortie Objectives: DODO2 initial flight. The objective is to investigate the in-situ and radiative properties of mineral dust over ocean areas off the coast of Senegal/Mauritania.

Operating area: North of Dakar. Oceanic areas.

Weather: A tropical disturbance (that became tropical storm Debbie) passed through the region early in the morning on the 20th August. The 20th showed low AODS (Dakar AERONET), but the forecasts were for significant dust AODs to the north of Dakar. The forecast also suggested only a few intrusions of scattered Cu throughout the operating region. Both of these forecasts proved accurate.

Flight Patterns: Subsequent to take-off, a short positioning run was performed at 5000ft before a profile descent to 50ft (1000ft/minute above 1000ft, and 500ft/minute below 1000ft), followed by a deep profile ascent to the north to FL200. 2/8 Cu cloud was present from 2500-4000ft. The aerosol showed some significant structure with the nephelometer suggesting a weak dust layer from 5000ft to 13000ft with neph scat at $25x10^{-6}m^{-1}$ and a stronger layer from 13000ft to 18000ft with neph scattering reaching $130x10^{-6}m^{-1}$. A SLR was then performed at FL160 in a northerly direction in the peak of the aerosol layer. The BBRs suggested a lower clear flux of $95Wm^{-2}$ suggesting a direct radiative effect of around $45Wm^{-2}$. A broken profile descent was then performed together with a reciprocal turn to FL080 where a SLR was performed in the lower, weaker dust layer in a southerly direction. A profile descent and reciprocal turn were then performed to 100ft. A 100ft SLR was then performed in a northerly direction to the northernmost point of the operations – a set of four orbits were performed half way along this run at 500ft and a bank angle of 50degrees. The SWS saturated for part of the orbit. The sea state varied from a benign SS2 to a SS6 at the northerly end of the run. A profile ascent was made to FL160 where another in-situ sampling SLR was performed. The aircraft then profiled to FL200 and made a SLR above the aerosol layer back towards Dakar before recovering to land. The BBRs continued to suggest a significant DRE of around $50Wm^{-2}$.

Summary: A successful flight in terms of both in-situ sampling and radiation measurements. The radiation measurements both above and below the dust layer mean that the DRE should be relatively simple to diagnose. There were a few intrusions of scattered Cu, mainly to the south of the operating region - care should be taken to exclude this data from the radiation measurements.

Problems:
Lower pyrgeometer – U/S. Will be fixed tomorrow.
Lower red pyranometer was reading some significant negative values when the shutter was closed.

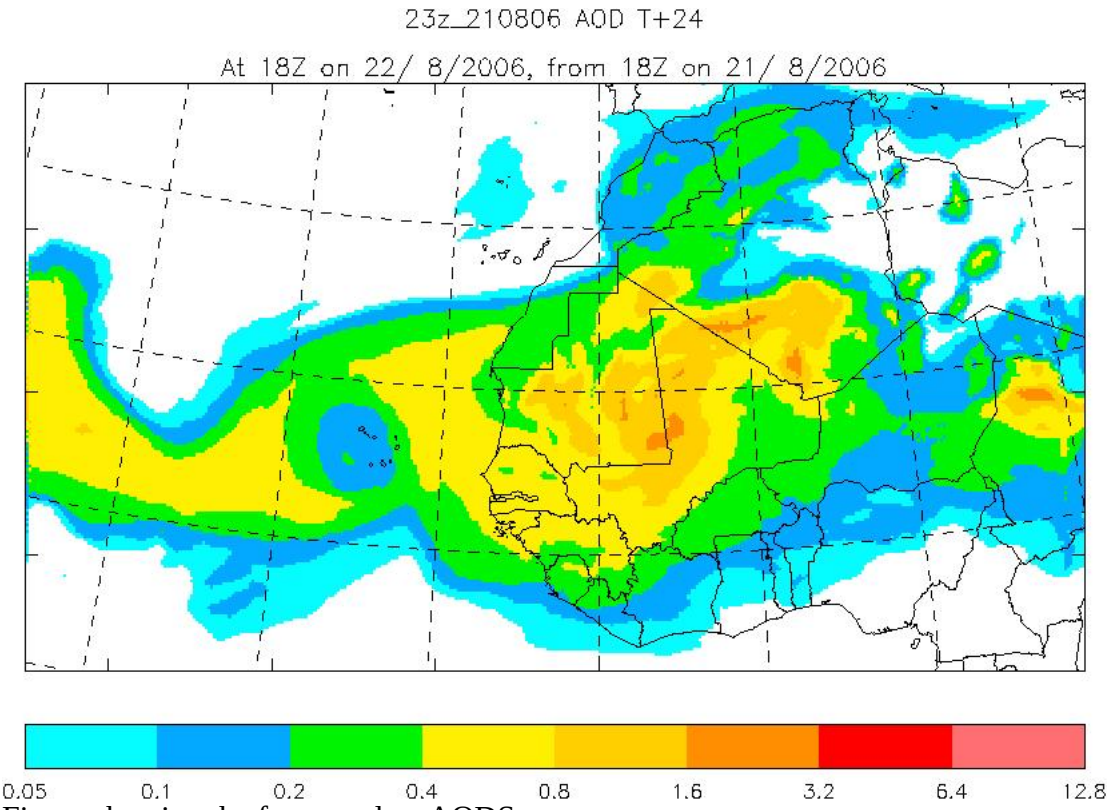
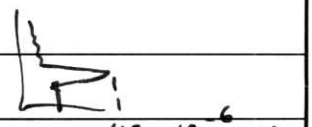


Figure showing the forecast dust AODS.

Jim Haywood

Mission Scientist's Log

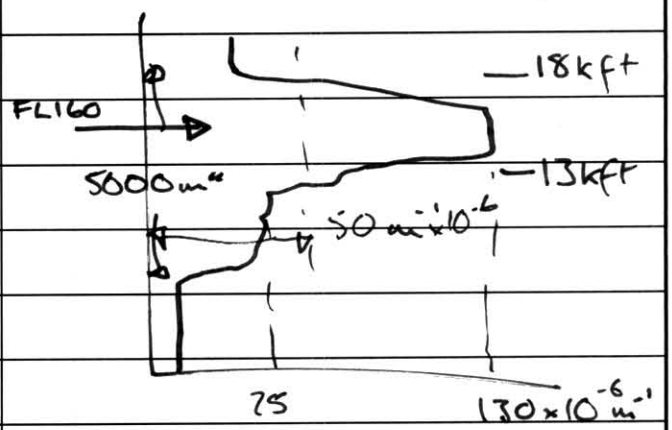
Flight No **B.237** Date 22 Aug 06 Name DODO2 / HAYWOOD age 1 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
					2/8 scattered Cu
					Some dust present - not a
					very blue sky.
~13:55					T/O
					Cloud base ~ 1250ft.
					Cloud top ~2500ft
					Dusty above cloud
					No Ci → dust only above.
140345	StR11	FL50	347		Positioning run. OK for upper
					BBRs & SHIMS.
14:13:26					2/8 Cu below → dusty above
					small amount of aerosol
					at ~2500ft.
					
14:17:1[illegible]	End Pt1 / StP1				Start profile descent.
1417:30					Close PSAP
					Top of clouds 4000ft.
14:24:37	End P1 / St P2				QNH 1017mb.
					Sea state 2.
	End P2 / St P1				Top of clouds ~ 3000ft.
					Bottom of aerosol at 5000ft.
					BBRs (upper) OK from ~14:26.
14:38					Clouds thinning below ~ 1/8
					Tephi shows moist layer
					~ 700 - 750 mb.

40 x 10^-6 m^-1.

Mission Scientist's Log

Flight No **B**.237..... Date .22.Aug.06 Name DODO2 / HAYWOOD age 2 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
	End P2	FL200↑	359		End profile ascent
	St P3	FL200↓	359		Start profile descent.
14:50:48	End P3 / St R2	FL160↳	4	17,42°N	End profile descent.
				18°W	Expose filters.
1458					change to upper & lower
					videos.
					Lower video shows
					no cloud below or above.
1459					Upper & lower BBRs look
					good.
					In upper aerosol layer.
					
					BBR lower = 95 W m^{-2}
					(should be ~ 50 W m^{-2} → DRE
					= 45 W m^{-2}).
					& AOD ~ 0.25 from neph
					~ 0.5 for large particles.
151029	End R2 St P4	FL160↓	3	19.24N / 18W	

Aircraft Scientist's Log

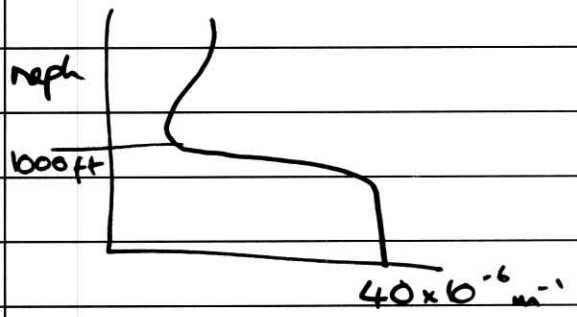
Flight No B.237.. Date 22 Aug 06 Name DADO 2/HAYWOOD... Page 3 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
	Int Profile	FL100			Interupt & reciprocal.
					Just a few scattered Cu
					below → check lower
					video camera.
					Sea state 5/6 perhaps.
151739	Rest P4	FL100↓			
15:20:01	End P4 St R3	FL80 →	186		Still in lower dust layer
					~ 40×10^{-6} m^{-1}.
15:40:					Free from cloud until
					~ 15:40, then a few scattered
					Cu below.
15:45					Cu dissapating → check
					BBR / cameras.
15:52:	End R3 St P5				
15:54:18	End P5	100ft			
	St R4	100ft	356		A little cloud at southern
					end of run → good after
					~ 16:06..
					Clear above & below for
16:12:17	Int R4				orbits. Lots of dust above.
16:14:01	St 01	500ft	080	18°30'N	Start 50° banked orbit.
16:15:15	End 01				Sea state 4
	St 02	500ft	250		Dust above, no cloud
16:17:19	End 02				should be good.
16:18:17	St 03	500ft			
16:19:27	End 03				

1 hour

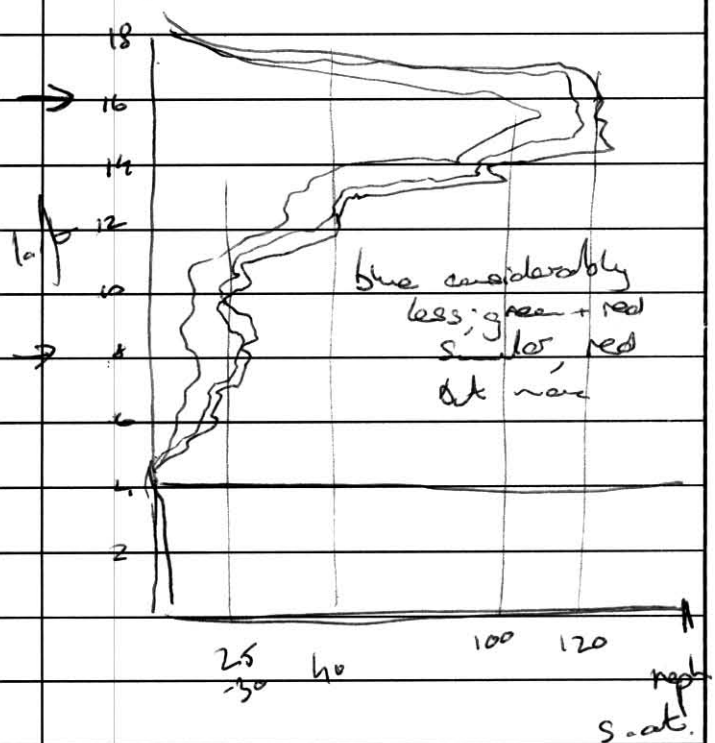
Aircraft Scientist's Log

Flight No **B.237.** Date 22 Aug 06. Name DODO2/HAYWOOD..... Page 4. of 5.

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
16:20:17	St04	500ft			Good orbits.
16:21:24	End04	500ft			End
16:22:50	Rest R4	100ft →	355	18°36'	
16:34:00					Sea rough SS 4/5.
					Free from cloud for almost
					entire 100ft run. Sea-salt evident
16:42					SS 5/6.
					Free from cloud.
16:43:50	End R5	60ft			Climb & reciprocal turn.
					A few ships visible.
16:45:33	St P6	100ft ↑	186	19.4, 18W	1000ft/min profile ascent.
					1000ft → clear slot
					
17:09:	run7	FL160	3		reciprocal turn heading at FL160
17:19:07	profile7	↑FL200	3	19N 18W	profile to FL200 to release sonde
17:23:46	end prof7	FL200		19°24N 18W	begin reciprocal to drop sonde
17:26:50	run8	FL200			Sonde release; release OK
18:00:26	end run8 start P8	FL200 ↓	163	16.6N 17°48W	descent to land
					broken cloud SC FEW TCN do
					low level extend Sc on.
					descent into Dakar.

Aircraft Scientist's Log

Flight No **B**.237 Date 22/3/06 Name HC Page 1 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
13:57:57					T/O, ascend to 5kft then descend to 50
					Cloud top 2.5kft
14:24:00		50 ft			profile ascent through dust layer
					

CLOUD PHYSICS LOG Flight B 237

Date: 22/8/06	Operator: MAP	DRS Time: 12:35:00	DAU1 Time:	DAU2 Time: +0	DAU3 Time: +0	Aux1 Time: +0	Aux2 Time: +0	Page 1 of 1

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
14:03:05																	Start Run 1 @ FL050
14:04:00	65	0.09		3													
14:06:00	55	0.09		2													
14:08:00	30	0.09		2													
14:10:00	20	0.09		2													
14:12:00	25	0.08		2													
14:14:00	40	0.08		5													
14:17:13	35	0.09		10													End of Run 1.1 & Start Profile 1 from FL050
14:18:19	35	0.08		5													FL040
14:19:30	80	0.08		10													FL030
14:20:44	130	0.09		10													FL020
14:22:01	75	0.08		10													FL010
14:24:36	160	0.08		10													End of Profile 1 & start Profile 2 @ 50’
14:26:27	150	0.08		40													FL010
14:27:13	80	0.08		10													FL020
14:28:14	50	0.08		5													FL030
14:29:13	35	0.10		5													FL040
14:30:14	40	0.11		30													FL050
14:31:27	85	0.11		40													FL060
14:32:19	100	0.11		30													FL070
14:33:17	85	0.12		40													FL080 Heaters on
14:34:19	95	0.11		60													FL090
14:35:17	95	0.11		50													FL100
14:36:19	75	0.12		40													FL110
14:37:22	85	0.12		40													FL120
14:38:17	85	0.16		90													FL130
14:39:15	100	0.14		80													FL140
14:40:13	125	0.16		90													FL150
14:41:19	100	0.15		80													FL160
14:42:17	100	0.15		90													FL170
14:43:17	70	0.09		10													FL180
14:44:18	Noise																FL190
14:45:24	5	0.08															End of Profile 2 @ FL200
14:46:20	Noise																Start Profile 3 from FL200
14:47:29	Noise			1													FL190
14:48:25	90*	0.12		80													FL180
14:49:40	120*	0.13		80													FL170
14:50:47																	End of Profile 3 & start Run 2 @ FL160
14:51:00	200*	0.12		80													
14:53:00	200*	0.11		80													
14:55:00	190*	0.11		80													
14:57:00	150*	0.12		90													
14:59:00	150*	0.11		90													
15:01:00	130*	0.12		90													
15:03:00	120*	0.11		80													
15:05:00	120*	0.11		80													

CLOUD PHYSICS LOG Flight B 237

Date: 22/8/06	Operator: MAP	DRS Time: 12:35:00	DAU1 Time:	DAU2 Time: +0	DAU3 Time: +0	Aux1 Time: +0	Aux2 Time: +0	Page 2 of 2

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
15:07:00	120*	0.11		80													
15:09:00	100*	0.09		30													
15:10:29																	End of Run 2 & start Profile 4 from FL160
15:11:30	130*	0.10		50													FL150
15:12:22	130*	0.10		40													FL140
15:13:14	120*	0.10		40													FL130
15:14:09	90*	0.11		30													FL120
15:14:55	90*	0.10		30													FL110
15:15:52	90*	0.10		20													FL100
15:18:51	90*	0.10		20													FL090
15:20:05	80*	0.10		20													End of Profile 4 & start Run 3 @ FL080
15:21:00	80	0.11		20													
15:23:00	80	0.13		30													
15:25:00	70	0.13		20													
15:27:00	60	0.12		20													
15:29:00	65	0.12		20													
15:31:00	65	0.11		15													
15:33:00	60	0.12		15													
15:35:00	65	0.11		15													
15:37:00	75	0.11		15													
15:39:00	75	0.11		15													
15:41:00	80	0.12		20													
15:43:00	90	0.12		20													
15:45:00	80	0.11		20													
15:46:43																	End of Run 3 & Start Profile 5 from FL080
15:47:48	100	0.12		20													FL070
15:48:57	140	0.10		10													FL060
15:49:56	100	0.11		40													FL050
15:51:05	160	0.08		5													FL040
15:52:18	1	0.11		1													FL030 Heaters off
15:55:38	55	0.08		5													FL020
15:57:06	600	0.07		90													FL010
15:59:28	400	0.08		80													End of Profile 5 & start Run 4 @ 100’
16:00:00	400	0.08		80													
16:02:00	440	0.08		70													
16:04:00	430	0.08		70													
16:06:00	430	0.08		70													
16:08:00	410	0.08		70													
16:10:00	410	0.08		70													
16:12:00	440	0.08		80													
16:12:22																	End of Run 4
16:14:03																	Start Orbits @ 500’
16:21:24																	End of Orbits
16:22:48																	Start Run 5 @ 100’
16:23:00	500	0.08		70													
16:25:00	510	0.08		80													

CLOUD PHYSICS LOG Flight B 237

Date: 22/8/06	Operator: MAP	DRS Time: 12:35:00	DAU1 Time:	DAU2 Time: +0	DAU3 Time: +0	Aux1 Time: +0	Aux2 Time: +0	Page 3 of 3

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
16:27:00	600	0.08		80													
16:29:00	500	0.08		80													
16:31:00	510	0.08		80													
16:33:00	540	0.08		80													
16:35:00	550	0.08		90													
16:37:00	540	0.08		80													
16:39:00	600	0.08		80													
16:41:00	560	0.08		80													
16:43:47																	End of Run 5
16:45:32	600	0.08		80													Start Profile 6 from 100’
16:47:29	220	0.08		10													FL010
16:48:33	70	0.09		5													FL020
16:49:33	90	0.08		10													FL030
16:50:31	140	0.08		10													FL040
16:51:25	135	0.08		10													FL050
16:52:31	120	0.09		10													FL060
16:53:25	75	0.12		20													FL070 Heaters on
16:54:27	65	0.11		10													FL080
16:55:30	65	0.12		10													FL090
16:56:35	60	0.13		20													FL100
16:57:32	60	0.12		15													FL110
16:58:40	75	0.12		20													FL120
16:59:40	70	0.14		40													FL130
17:00:49	75	0.15		60													FL140
17:01:59	80	0.15		60													FL150
17:03:07	80	0.14		60													End of Profile 6 & start Run 6 @ FL160
17:04:00	80*	0.13		60													
17:06:00	80*	0.14		50													
17:07:50																	End of Run 6
17:10:08																	Start Run 7 @ FL160
17:11:00	90*	0.12		60													
17:13:00	90*	0.11		60													
17:15:00	90*	0.12		70													
17:17:00	80*	0.11		70													
17:19:00																	End of Run 7 & start Profile 7 from FL160
17:20:26	40*	0.09		30													FL170
17:21:31	30*	0.08		10													FL180
17:22:42	1*	0.06		1													FL190 40 / CC noise
17:23:45	5*	0.06															End of Profile 7 @ FL200
17:25:50																	Start Run 8 @ FL200
17:26:00	5*	0.06		1													60 / CC noise
17:28:00	5*	0.06															
17:30:00	5*	0.06		1													
17:32:00	5*	0.06															100 / CC noise
17:34:00	5*	0.06		1													
17:36:00	5*	0.06		1													

CLOUD PHYSICS LOG Flight B 237

Date: 22/8/06	Operator: MAP	DRS Time: 12:35:00	DAU1 Time:	DAU2 Time: +0	DAU3 Time: +0	Aux1 Time: +0	Aux2 Time: +0	Page 4 of 4

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
17:38:00	5*	0.06		1				Noisy									2D2-P Switched off due to noise
17:40:00	5*	0.06				Noisy											2D2-C Switched off due to noise
17:42:00	10*	0.06															
17:44:00	5*	0.06		1													
17:46:00	10*	0.06															
17:48:00	5*	0.06															
17:50:00	5*	0.06															
17:52:00	5*	0.06															
17:54:00	10*	0.06															
17:56:00	5*	0.06															
17:58:00	5*	0.06															
18:00:00	5*	0.06															
18:00:28																	End of Run 8 & start Profile 8 from FL200
18:01:24	10*	0.06		1													FL190
18:02:20	100*	0.11		80													FL180
18:03:10	100*	0.12		80													FL170
18:04:04	120*	0.10		80													FL160
18:04:57	150*	0.10		80													FL150
18:06:01	150*	0.10		70													FL140
18:07:10	130*	0.08		30													FL130
18:08:10	100*	0.09		30													FL120
18:09:11	90*	0.10		40													FL110
18:09:54	90*	0.09		50													FL100
18:10:45	100*	0.10		50													FL090
18:11:45	120*	0.10		40													FL080
18:12:55	160*	0.11		40													FL070
18:14:00	60	0.09		10													FL060
18:15:10	50	0.09		10													FL050
18:16:24																	End of Profile 8 *FL040

*PCASP estimates due to noise mainly in Channel 1, though sometimes some noise in channel 7
PCASP flow rate = 1.35 CC/sec
2D instruments switched off later in flight because of noise problems due to dirty optics and cold
SID1 operated

SWS FLIGHT LOG SHEET

Flight # B237 | Date 22/8/06 | Operator(s) C. McCONNELL | log page 1 of 3

Time	Run id	Alt/FL	Mirr Pos	Int Times Vis	Int Times NIR	Remarks
			6°F			On ground. NIR Fine.
						VIS erratic. Even when
						signal present - signal often odd :
						mmmm rather then ^
1345		grnd	6F	15	30	Rec for T/O.
115023						Dark
115037						Rec
135855		T/O				
140414						Dark
140433	R1					Rec
140647			174A	15	30	Dark NADIR
140706	R1			15	30	Rec
140726				75	150	Dark
140738	R1	5kft		75	150	Rec
141025				150	250	Dark
141039				150	250	Rec
141714	P1					14:24 - angle changed while recording
142500			6F	150	250	Dark
142519						Rec ZENITH
142560				75	150	Dark
142568				75	150	Rec
142623				30	75	Dark
142634	P2					Rec
144157						Dark
144204						Rec
144623				30	75	Dark
144635						Rec
144710						Dark
144723						
146907				30	75	Dark
146920						Rec
146950				50	200	Dark
145003	P3					Rec - NIR only
145141	R2-1					Run start
150003			174A	50	200	Dark NADIR
150020	R2-1					Rec
1505						Some VIS signal present
150716				150	400	Dark
150728						Rec
151929			6F	150	400	Dark ZENITH
151944						Rec

SWS FLIGHT LOG SHEET

Flight # B237 | Date 22/8/06 | Operator(s) C.M°CONNELL | log page 2 of 3

SWS

Time	Run id	Alt/FL	Mirr Pos	Int Times Vis	Int Times NIR	Remarks
152001	R2-2		6F	150	400	~~[illegible]~~
154034						Dark
154045						Rec
1544						VIS signals odd
1549	P5					VIS seems OK again
1550	P5					VIS odd again
155929	R4	low	6F	150	400	Start Run VIS seems OK
160655				150	400	Dark
160730				150	400	Rec
161229				150	400	Dark
161240						Rec
161333				100	350	Dark
1613						Rec - orbits VIS OK
161749				100	350	Dark
161800						Rec - Sample time = 0.1s, VIS OK except for 3/4 way through last orbit.
162415	R5			100	350	Dark
162436						Rec
162503				100	350	Dark sample time = 0.5sec
162516	R5					Rec - VIS back
162728			174A	100	350	Dark
162739						Rec - NADIR
162812				~~100~~ 250	~~350~~ 500	Dark
162823						Rec
163112						Dark
163147			6°F	150	400	Dark
163204	R5					Rec - ZENITH
~~163~~						
164611			6F	150	400	Dark
164628						Rec
164533	P6					
170635						Dark
170703			174A	150	400	Rec - NADIR
170722						Dark
171008	R7	16kft				
171402				250	500	Dark
171418						Rec
172154				350	750	Dark
172214	P7	/				Rec
172600	R8	FL200				

SWS FLIGHT LOG SHEET

Flight # B236 | Date 22/8/06 | Operator(s) C. MCCONNELL | log page 3 of 3

SWS

Time	Run id	Alt/FL	Mirr Pos	Int Times Vis	Int Times NIR	Remarks
173450			174A	350	750	Dark
173511						Rec
174254						Dark – vis gone
						Reinit SWS
174409			174A	350	750	Dark
174426						Rec – still NO VIS
174540						Dark
174729			[illegible]	350	750	Dark – but got NIR Signal
174752						Dark "
176815						Dark "
175007			[illegible]	350	750	Dark – OK
175024						Rec
180043			174A	350	1000	Dark SWS
180101						Rec
180134			6F	350	1000	Dark
180150						Rec – ZENITH
182601						Land
182703						Dark

SHIMS? Not sure. ?

THESE MAY BE SHIMS

SHIMS

~~SWS~~ SHIMS FLIGHT LOG SHEET

Flight # B237 | Date 22/8/06 | Operator(s) C-MCCONNELL | log page 1 of 3

Time	Run id	Alt/FL	Mirr Pos	Int Times Vis	Int Times NIR	Remarks
		USH				Cloud around below
141143				100	200	Dark - interrupted
141222				100	200	Dark - interrupted
1413						Restart Labview
141658				100	200	Dark
141527						Rec
141544				50	200	Dark
141555				50	200	Rec
1420						NIR Signal dropped out
142810				50	200	Dark
142830		P2				Rec - no signal at all
						Reinitialize USH
						Restart SHIMS + Labview
143344		P2		50	100	Dark
143355				50	100	Rec - VIS only
146001						Dark
146038						Rec
146402						False Dark
146429						" "
146469				50	100	Dark
146515						Rec
145115						Dark
145129						Rec - no signal.
145317				50	100	Dark
145328	R2.1					Rec - Mostly VIS only.
1459						Reinit SHIMS
						Restart SHIMS
		LSH				
150253				150	300	Dark NIR
150325				150	300	Dark VIS
150347						Rec - VIS only (LSH)
150417				250	300	Dark
150439	R2.1					Rec
1514						Restart SHIMS
		USH				
152043				50	100	Dark - USH
152111						Rec - VIS+NIR present
154149						Dark

SHIMS **~~SWS~~ FLIGHT LOG SHEET**

Flight # B237 | Date 22/8/06 | Operator(s) C. McCONNELL | log page 2 of 3

Time	Run id	Alt/FL	Mirr Pos	Int Times Vis	Int Times NIR	Remarks
	SHIMS					
		USH				USH
1542						Restart SHIMS
154622				50	100	Dark
154633	R2					Rec
154645	P5					
155223						Dark
155240						Rec – No Signal
						Reinit SHIMS
155710				50	50	Dark
155720				50	50	Rec – VIS ONLY. NIR didn't initialize.
155929	R3					Low level Run
162910						Dark
	LSH					
163007				300	750	Dark NIR
163027						DARK VIS
163047						Rec
163230				500	1000	Dark
163255						Rec
163510						Dark
	USH					
161704				50	100	Dark
163713	R5					Rec – VIS only
164501						Dark
164512						Rec
164533	P6					Profile start
170765						Dark
170840	LSH			250	350	Dark
170900						Rec – LSH
170922				350	750	Dark
170953						Rec
171008	R7	16kft				
172022				500	750	Dark
172101	P7					Rec
172600	R8	FL200				
173257				500	750	Dark. Accidentally not recording for last 10 min or so.
173335						Rec
173954						Dark. Then restart SHIMS
174902				500	500	Dark
174925						Rec – VIS OK. Then VIS disappeared + NIR up.

SHIMS

SHIMS **SWS FLIGHT LOG SHEET**

Flight # B237 | Date 22/8/06 | Operator(s) C. MCCONNELL | log page 3 of 3

SHIMS

Time	Run id	Alt/FL	Mirr Pos	Int Times Vis	Int Times NIR	Remarks
175149	LSH			500	500	Dark VIS
175221						Rec - VIS OK
180465						Dark
	USH					
180551				350	500	Dark
180608						Rec
180634				200	500	Dark
180647				200	500	Rec
181437						Dark
						End for landing.

Flight Manager's Instrument Status Log

Flight No. **B**237 Date: 22nd August 2006

Instrument	Operated	Instrument	Operated
Navigation		**Cloud Physics**	
INU	**Y**	**Probes**	
XR5M GPS	**Y**	FFSSP	**N**
Cruciform GPS	**Y**	PCASP	**Y**
Satcom C	**Y**	2D-P	**Y**
Satcom H	**Y**	2D-C	Y
Thermometers		Cloudscope	**N**
De-Iced Temp	**Y**	SID 1	**Y**
Non De-Iced	**Y**	SID 2	**N**
Heimann	**Y**	HVPS	**N**
Hygrometers		CIP25	**N**
G. Eastern	**Y**	CIP100	**N**
J. Williams	**Y**		
Nevzorov	**Y**		
TWC	**N**	**Racks:**	
FWVS	**N**	INC	**N**
Radiometers		CCN / CPC	**N**
Upper Clear	**Y**	CVI	**N**
" Red	**Y**		
" Silicon	**Y**		
" SHIMS	**Y**	**Aerosol**	
Lower Clear	Y	PSAP	**Y**
" Red	**Y**	Nephelometer	**Y**
" Silicon	**Y**	Filters	**Y**
" SHIMS	**Y**	AMS	**N**
Large Radiometers		**Others:**	
IR Camera	**N**	CAMP SAW	**N**
TAFTS	**N**	CAMP CDP	**N**
MARSS	**N**	AVAPS	**N**
DEIMOS	**N**	IR Camera	**N**
ARIES	**N**	NIR TDLAS	Y
SWS	Y	2BT O3	N
Chemistry		VACC	N
Ozone	Y	PEROXIDE	N
SO2	N	Formaldehyde	N
NOX	Y	ADA	N
CO	Y	CPI	N
ORAC	N	Noxy	N
PAN	Y	PTRMS	N
PERCA	N	Bag Sampling	N
WAS	N	Tube Sampling	Y

Faults / Incidents Log

Flight No. B237
Date: 22st August 2006

Instruments

Forward facing camera window needs cleaning
Lower IR BBR data bad. Fault appears to be in sensor head.

Aircraft

Satcom H Calls

MISSING LOG SHEETS:

The following log sheets are not available for flight B237:

Log	Reason
Cloud Physics Processing	Awaiting processing completion
PSAP	No log appears to have been taken for this flight
Filters	Awaiting completed log
Core Chemistry	no In Flight log except in cases of instrument problems
AMS	Log only of interest to instrument operator so no copy left with FAAM
AVAPS	No log currently available

VIDEO RECORDINGS:

3 x Downward Facing Cameras
3 x Upward Facing Cameras

Digital8 video recordings from this flight reside with :

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